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27 - 30 September 2009 • Sydney Australia

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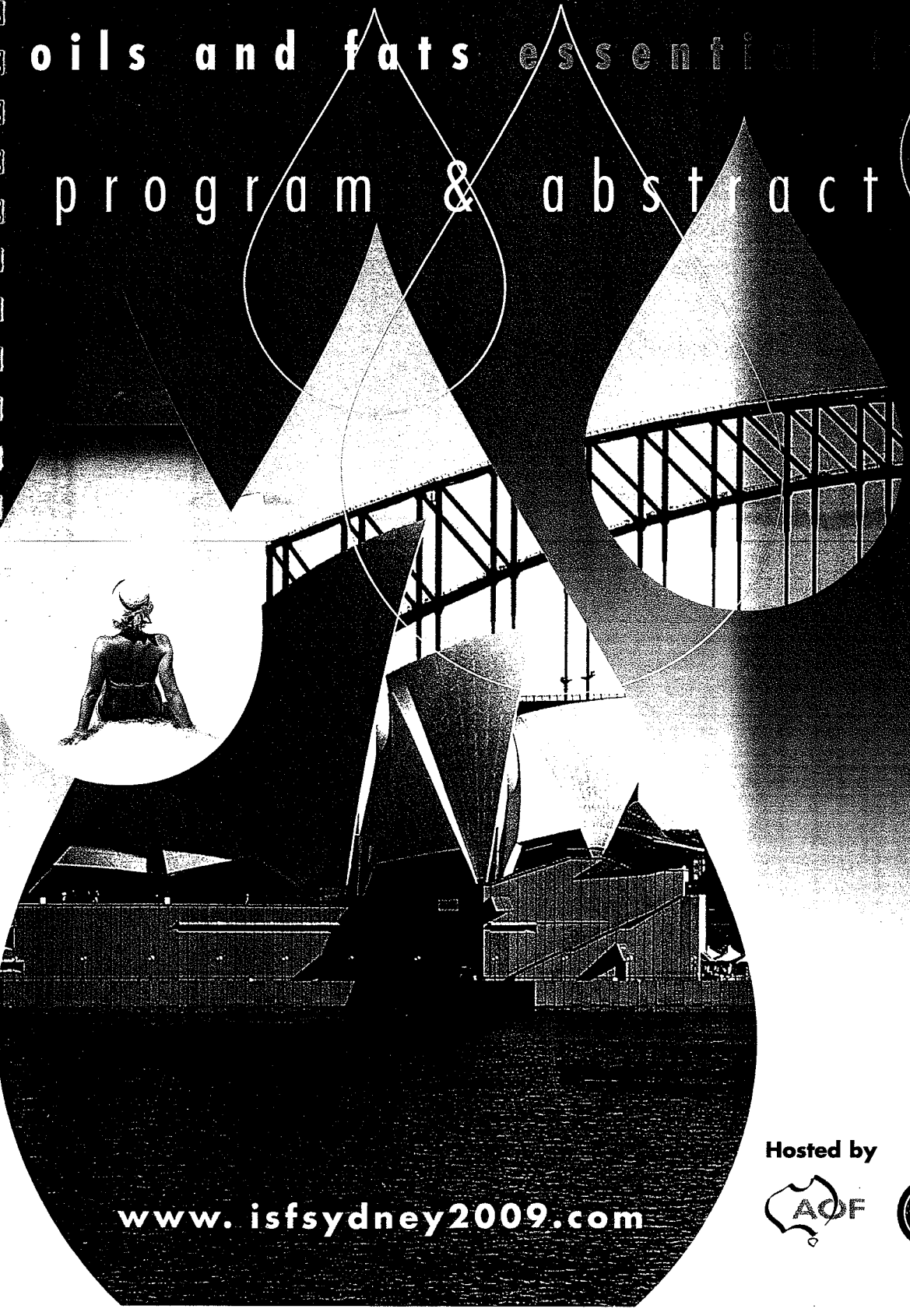

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GROWTH RESPONSES OF LACTATING FIRST-PARITY DAIRY COWS TO CANOLA AND LUPIN SUPPLEMENTATION

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The effect of supplementing young, first-parity dairy heifers in mid-lactation with canola meal and cracked lupins on growth traits was investigated. The objective was to evaluate body condition scores (BCS), liveweight (LWT) and average daily gain (ADG) responses in purebred Holstein-Friesian and Holstein-Friesian x Jersey crossbreds and to ascertain variation due to breed, supplement and feeding level. A 2 x 2 x 2 balanced factorial experimental design representing 2 breeds, 2 supplements and 2 feeding levels (1 or 2 kg/cow/day) was utilized in randomly allocating fifty (10 unsupplemented control and 40 supplemented) cows to treatment groups after balancing for LWT, BCS and days in milk. All cows had *ad libitum* access to ryegrass pasture and barley and had a 3-week adjustment period to the supplements. The feeding trial lasted for 12 weeks commencing from October 2008 and ending in February 2009. LWT and BCS measurements were taken monthly. Average daily gain was computed and all data statistically analysed using mixed models procedure in SAS. Our results demonstrated that Holstein-Friesian cows gained 10kg more LWT than Holstein-Friesian x Jersey crossbreds and 20kg more than the unsupplemented cows at the end of the experiment. In all breeds, liveweight increased from 352kg in October, reached a peak in January and began to decline in February. BCS followed a similar pattern rising from an initial score of 2.5 to 3.5 in all breeds with the Holstein-Friesian in better condition than the crosses and control group. In contrast to LWT, ADG declined from an initial 0.6kg/day in October to 0.0kg/d in February in Holstein-Friesian while the unsupplemented cows lost weight as the feeding trial progressed. It was clearly demonstrated that the highest responses in ADG and LWT were in cows fed canola at 1kg/cow/day closely followed by 2kg/cow/day of lupins. In conclusion, supplementing mid-lactation dairy cows with canola elicits a better LWT and ADG response than lupins. Also, supplementing at 1kg/cow/day is cheaper and triggers the same response as 2kg/cow/day. Supplementation would be beneficial in maintaining liveweight and good body condition for better conception rates in young breeding cows.